STATE OF CONNECTICUT

FLOOD CONTROL AND WATER POLICY COMMISSION

ROOM 317, STATE OFFICE BUILDING

HARTFORD,

December 21, 1949

Mr. Herman J. Kropper
77 Friendly Road
Cranston, Rhode Island

Dear Mr. Kropper:

Enclosed is a report of the Connecticut State Flood Control and Water Policy Commission relative to the recommendations of the New England Division Engineer for the improvement of navigation in the Connecticut River from Long Island Sound to Holyoke, Massachusetts, with development of hydro-electric power at a multi-purpose dam at Enfield Rapids in Connecticut.

It is my understanding that the Board of Engineers on Rivers and Harbors, U. S. Corps of Engineers, will hold a public hearing on this project the latter part of January.

Sincerely yours,

Richard Martin

Richard Martin
Secretary

RM:m

FLOOD CONTROL AND WATER POLICY COMMISSION

December 21, 1949

Board of Engineers for Rivers and Harbors
Room 1336, Temporary Building T-7
Gravelly Point
Washington 25, D. C.

Gentlemen:

The Connecticut Flood Control and Water Policy Commission is the State Agency designated by the Governor to cooperate with the Corps of Engineers on River and Harbor improvement matters under the provisions of the 1945 Rivers and Harbors Act.

Enclosed is the report of the Commission relative to the recommendations of the New England Division Engineer for the improvement of navigation in the Connecticut River from Long Island Sound to Holyoke, Massachusetts, with development of hydroelectric power at a proposed multi-purpose dam at Enfield Rapids in Connecticut.

Also enclosed is a copy of the minutes of a hearing held by the Commission June 23 concerning the proposed project and copies of statements submitted to the Commission at and subsequent to the Hearing.

It is my understanding that the Board of Engineers on Rivers and Harbors will conduct a hearing on this matter in the near future. I would appreciate it if you can give us information as to the date and place of any such hearing so that we may be represented and express our views further.

Inasmuch as previous proposals for navigation from Hartford to Holyoke, Massachusetts, with the development of power at a multi-purpose dam at Enfield Rapids have been highly controversial for some thirty years, it may be desirable to discuss further some aspects of the project. The comments in this letter are my personal observations and do not necessarily reflect the views of the other members of the Commission.

For many years the power requirements of the people and industries of Connecticut have been supplied by hydroelectric and steam generating units located within the State. More than 90 per cent of the annual total has been generated at steam plants. Hydroelectric plants have been used primarily to meet peak load requirements. Additional steam generating units have been installed since the War. Others are in the process of construction and still more are planned for installation in the near future. The proposed hydroelectric plant at the Enfield Rapids will be of maximum value to the people of Connecticut if the power generated there is integrated with existing generating facilities in this State so as to help carry the larger peak loads of the anticipated increased total power consumption, the greater base load of which will be supplied by the enlarged steam generating installations.

Coordinated with existing steam generating plants, the proposed project will have considerable value. Its usefulness does not depend on any other program for development of the water resources of the Connecticut River Valley. It is worthy of note, however, that other existing hydroelectric facilities, at Holyoke, Massachusetts, and at Wilder, Vermont, are also in the process of being redeveloped by private owners under license from the Federal Power Commission. Increased production at those sites will be available for use in conjunction with power from new and proposed additional steam units in other parts of New England.

Since river flows in this region are inadequate to provide base load power in the quantities used here, the great bulk of power requirements will continue to be met by steam generation, the cost of which varies with the price of fuel. Hydro plants have a very definite value in this region as suppliers of peak power but are not an accurate measure of the cost of producing the total power consumed.

To the extent that power produced at the Enfield Rapids dam can be fed into existing distribution systems at a cost less than the cost of producing the same amount of power by steam or other hydroelectric plants, the proposed project will tend to effect a reduction in the cost of electricity to the customers of those systems. If Enfield Rapids power had been available during 1948 at the estimated cost of producing it, the average cost of power in Connecticut last year could have been reduced by approximately one-tenth of one mill per kilowatt hour.

The recommendation of the Division Engineer calls for construction and operation of the proposed power plant by the Corps of Engineers, with the sale of power at the plant to an existing power utility. At the hearing of the State Flood Control and Water Policy Commission the Windsor Locks Canal Company, owner and operator of the existing dam and canal at the Enfield Rapids, indicated its willingness to construct the power generating facilities proposed by the Division Engineer. The right to undertake such construction has existed for a long time in the past, except that it has been generally accepted by private interests and by the state and federal government that no dam could be constructed at this point to an elevation greater than 37.4 feet.

The federal government now proposes to build a dam to elevation 45.0 feet. Operation by the distributing company of the generating facilities would permit closer integration than operation and distribution by separate agencies. We believe the offer of the Company should have careful consideration by your Honorable Board.

The Connecticut State Highway Department has no funds other than those collected directly from highway users. Taxes imposed specifically on Connecticut highway users should not be expended for navigation benefits or for the production of power. We believe that the proposed project should include any necessary reconstruction by the Federal Government of bridges.

Yours very truly,

Richard Martin

Richard Martin, Secretary
STATE FLOOD CONTROL AND WATER POLICY
COMMISSION

RM:fl

IN THE MATTER OF THE RECOMMENDATION BY THE NEW ENGLAND DIVISION ENGINEER, U. S. CORPS OF ENGINEERS FOR IMPROVEMENT OF NAVIGATION IN THE CONNECTICUT RIVER FROM LONG ISLAND SOUND TO HOLYOKE, MASSACHUSETTS WITH DEVELOPMENT OF HYDRO ELECTRIC POWER AT A PROPOSED MULTI-PURPOSE DAM AT ENFIELD RAPIDS IN CONNECTICUT.

I

On June 9, 1949 the New England Division Engineer, U. S. Corps of Engineers recommended:

(a) Improvement of the existing navigation channel in the Connecticut River from Long Island Sound to Hartford, Connecticut by increasing the depth from 15 to 16 feet at mean low water, by additional widening at the bends of the existing channel and by creation of anchorage areas 16 feet deep at mean low water, 600 feet long and 300 feet wide at Old Saybrook, East Haddam, Haddam, Cromwell and Rocky Hill.

(b) Creation of a navigation channel in the Connecticut River from Hartford, Connecticut to Holyoke, Massachusetts 100 feet wide, 12 feet deep at a river stage corresponding to 2 feet at Hartford and having a vertical clearance of 20 feet above a river stage corresponding to 16 feet at Hartford and creation of a turning basin at Holyoke.

(c) Construction of a dam at the Enfield Rapids in Connecticut to elevatio 45 feet, Army Engineers' datum with a navigation lock 56 feet wide, 360 feet lon and having a depth of 18 feet over the sills.

(d) Construction at the proposed Enfield Rapids Dam of a hydroelectric plant with a rated capacity of 42,000 kilowatts and a maximum capacity of 48,000 kilowatts.

These recommendations resulted from a detailed and comprehensive examination by the Army Engineers of the feasibility of additional development and utilization of the water resources of the Connecticut River.

Throughout the study the Army Engineers have worked closely with the Flood Control and Water Policy Commission, the State agency designated by the Governor of Connecticut to cooperate in matters of flood control, river and harbor improvement and shore and beach erosion. The Division Engineer's office kept us informed during the course of the study and was receptive to our suggestions. The joint effort of the two agencies has produced a project with maximum benefits and a minimum of social and economic disruptions to the people of Connecticut. This highly satisfactory Federal-State cooperation is an accomplishment of the Federal Rivers and Harbors Act of March 5, 1945 which established procedures for joint participation in investigation and development of river and harbor projects.

The Flood Control and Water Policy Commission has not duplicated any detailed studies made by the Army Engineers. We have carried on independent research relative to the beneficial and adverse effects on the people which may result from the project. We have familiarized ourselves with the analytical procedures and methods used by the Army Engineers in reaching their conclusions

On June 23, the Flood Control and Water Policy Commission held a public hearing in Hartford to obtain the views of Connecticut interests concerning the recommendations of the Division Engineer. During the hearing, statements were submitted by:

Mr. Richard Martin, Secretary
Connecticut Flood Control & Water Policy Commission,

Mr. Herman J. Kropper, Chief, Civil Works,
New England Division, Corps of Engineers,

Mr. Robert H. Knowlton, President, Windsor Locks
Canal Company, and President, Connecticut
Light & Power Company,

Mr. Austin D. Barney, President, Hartford
Electric Light Company, and Vice-Chairman
of the Board, Connecticut Power Co.,

Dr. Russell P. Hunter, Superintendent
Connecticut Board of Fisheries and Game.

Subsequently, statements were submitted to the Commission by:

Dr. G. Albert Hill, Connecticut Highway Commissioner,

Mr. C. S. Robinson, Chairman, Zone Committee 1,
Waterway Projects, Association of American Railroads.

A copy of each statement is attached.

A copy of minutes of the hearing is also attached.

II

On the basis of testimony given at the hearing and other information available to it, the Connecticut Flood Control and Water Policy Commission finds:

1. The people of Connecticut will benefit from the proposed improvement of the existing navigation channel from Long Island Sound to Hartford.

2. The plans for the proposed navigation channel from Hartford to Holyoke will not damage the people of Connecticut, with the exception of the requirement that the State of Connecticut raise highway bridges between Windsor Locks and Warehouse Point and between Suffield and Thompsonville.

3. The proposed installation of 42,000 kilowatts rated and 48,000 kilowatts maximum capacity at the multi-purpose dam at Enfield Rapids in Connecticut is practicable. The estimate of 237,000,000 kilowatt hours, net after allowance for loss incurred by existing installations as the average annual power production at the dam and the estimate of 179,000,000 kilowatt hours for the driest year of record are reasonable.

4. The output of the proposed power installation will have economic use in Connecticut by the time the project can be constructed.

5. The Division Engineer's estimate of cost of the combined navigation and hydroelectric project is reasonable and adequate and the method used by the Division Engineer to allocate a portion of the entire cost to the production of power is equitable.

6. The proposal of the Division Engineer for improvement of navigation in the Connecticut River from Long Island Sound to Holyoke, Massachusetts with the production of hydroelectric power at Enfield Rapids in Connecticut should be undertaken whenever the Congress deems it advisable to appropriate the necessary funds.

III

The Commission urges the Board of Engineers for Rivers and Harbors and the Chief of Engineers to revise the recommendation of the Division Engineer to provide:

1. That the proposed construction and operation of fish ways and proposed replacement of an existing fishing pier at the Enfield Rapids dam be carried out in accordance with state and local regulations.

2. That the relocation of the sewage treatment plant at Thompsonville, Connecticut be in accordance with state and local regulations.

3. That the Windsor Locks-Warehouse Point state highway bridge and the Thompsonville-Suffield state highway bridge be reconstructed at the expense of the Federal Government.

4. Statutory provision for determination by the U. S. Court of Claims of claims for damage done by the proposed project to existing water power rights and installations at Windsor Locks in Connecticut and at Holyoke and Chicopee in Massachusetts. In previous reports the estimated cost of redevelopment has always included payment by the United States for such damage. The current recommendation of the Division Engineer notes that there is no legal basis for compensation by the United States for such damage.

5. For careful consideration of the offer of any private company distributing power in Connecticut to construct the proposed power generating facilities, in accordance with the licensing provisions of the Federal Power Act, under contract with the United States for purchase of water and provided that the cost of construction shall not be greater than the cost if constructed by the United States.

6. Improvements of the entrance from the Connecticut River to Wethersfiel Cove.

7. Improvement of the channel at Hartford to permit better landing and shipping facilities at Hartford.

8. That construction plans for the dam take into consideration the possibility of using water from the Connecticut River for irrigation purposes.

Respectfully submitted

CONNECTICUT FLOOD CONTROL & WATER POLICY COMMISSION

By _____

Richard Martin, Secretary

M I N U T E S

PUBLIC HEARING
CONNECTICUT STATE FLOOD CONTROL
and WATER POLICY COMMISSION

State Office Building - Hartford
June 23, 1949.

Concerning the recommendation of the New England Division Engineer, U. S. Corps of Engineers for improvement of navigation from Long Island Sound to Holyoke, Massachusetts with the development of power at a multiple purpose dam at Enfield Rapids.

The Hearing was called to order at 2:00 P.M. by Chairman S. H. Wadhams, State Flood Control and Water Policy Commission.

Present were:

S.H.Wadhams, Chairman, Flood Control & Water Policy Commission
Richard Martin, Secretary " " " " " "
John J. Curry, Senior Engineer" " " " " "
Herman J. Kropper, New England Division Corps of Engineers
Frederic M. Rice " " " " " "
John B. McAleer " " " " " "
Wesley F. Restall " " " " " "
William A. Slagle " " " " " "
John H. Spellman, Federal Power Commission, New York
A. M. Monaco, Federal Power Commission, New York
Burke L. Bigwood, District Engineer, U. S. Geological Survey
Roland A. Warren, U. S. Public Roads Administration
Dr. Russell P. Hunter, Supt. State Board of Fisheries & Game
Curtis J. Hooper, Director of Planning, Conn. State Highway Dept.
Robert G. Mitchell, Ass't Highway Engineer, Conn.State Highway Dept.
Charles W. Cooke, Deputy Director, Hartford Public Works Dept.
R. H. Knowlton, President, Windsor Locks Canal Co.,
President, Connecticut Light & Power Company
Olcott D. Smith, Attorney, The Windsor Locks Canal Co.
E. J. Amberg, Windsor Locks Canal Company
Sherman R. Knapp, The Connecticut Light & Power Co.
George G. Hanel, The Connecticut Light & Power Co.
Ralph D. Cutler, Vice-President, Hartford Electric Light Co.
Charles L. Smiddy, General Counsel, Hartford Electric Light Co.
Connecticut Power Co.
John S. Gunning, Hartford Electric Light Co.
E. H. Lawton, Hartford Electric Light Co.
E. C. Brown, Connecticut Valley Power Exchange
C. S. Robinson, Ass't Chief Engr. Boston-Maine R.R.
Chairman Zone #1 Committee on Waterway Projects, Am.
Assoc. of Railroads, 150 Causeway St., Boston, Mass.
F. J. Pitcher, Asst. to Chief Engr., N.Y., N.H. & H.R.R.
W. E. Pierce, District Traffic Agent,
N.Y., N.H. & H.R.R., Hartford, Conn.

George P. Elliott, District Engineer, N.Y., N.H. & H. R.R., New Haven, Conn.
John H. Gardner, Jr., N.Y., N.H. & H.R.R. Co.
E. K. Mentzer, Asst. to Gen. Manager, New York City R.R., Boston
C. W. Cummings, Div. Freight Agent, New York Central System, Springfield, Mass.
H. C. Archibald, Asst. to Chief Engineer, Boston & Main R.R. Boston, Mass.
Charles E. Hart, #7 Birchwood Road, East Hartford, Conn.
James McWilliams Blueline, #1 Broadway, N. Y. C.
Charles H. Schreyer, Manufacturers' Association of Conn.
A. W. Ladd, Hydraulic Engineer, Holyoke Water Power Co., Holyoke, Mass.
Edward A. Plumley, New England Power Group, 34 Andrew Rd., So. Weymouth, Mass.
H. A. Moody, Western Mass. Electric Co., Turners Falls, Mass.
Anthony F. Pimentel, Chicopee Planning Board, Chicopee, Mass. Member Advisory Committee, National Rivers & Harbors Congress, Washington, D. C.
Wilfred B. Thivierge, Executive Secretary, Mayor's Office Chicopee, Mass.
Edward Taylor, 3 School St., Warehouse Point, Conn.

Mr. Martin read a statement concerning the proposed project. A copy is attached.

Mr. Kropper read a statement describing the recommendation. A copy is attached.

Mr. Smith, Attorney for the Windsor Locks Canal Company read a statement signed by Mr. Knowlton, President of the Windsor Locks Company and of the Connecticut Light & Power Company. A copy is attached.

Mr. Smiddy, Attorney for the Hartford Electric Light Company and the Connecticut Power Company submitted a statement signed by Austin B. Barney, President of the Hartford Electric Light Company and Vice-Chairman of the Board of the Connecticut Power Company. The statement was read by Mr. Cutler, Vice-President, Hartford Electric Light Company. A copy is attached.

Mr. Robinson, Chairman, Zone 1, Committee on Waterways Projects, American Association of Railroads stated that he had not had an opportunity to examine the appendices to the Division Engineer's report but that the Committee opposes the navigation part of the proposed project because it is not economically sound. He asked permission to submit a written statement at a later date after examining the detailed appendices. A copy of such statement is attached.

Mr. Mentzer stated that the Central Vermont Railroad would be adversely affected by diversion of traffic and is opposed to the project.

Mr. Kropper explained that under the Federal Law, the entire cost of alterations to railroad bridges including approaches would be borne by the United States. He added that the Boston and Albany Railroad bridge at Springfield would not be affected.

Mr. Pierce stated that the New Haven Railroad is opposed to the project because no new traffic will be created. Existing traffic will be diverted from the New Haven Railroad and benefits would be derived only by change in method of transportation. He stated that his experience has been that such benefits are not passed on to the consumer. In his opinion the estimated benefits are over optimistic. He added, too, that the New Haven Railroad's opinion would be expressed by the statement to be submitted by Mr. Robinson.

Mr. Cummings stated that the attitude of the New York Central Railroad concerning the project would be expressed in Mr. Robinson's statement.

Dr. Hunter read a statement. A copy is attached.

Mr. Hooper said that a statement expressing the opinion of the Connecticut State Highway Commissioner would be submitted subsequently. A copy of such statement is attached.

Mr. Martin pointed out that the proposed project would extinguish existing rights at Enfield Rapids in Connecticut and at Chicopee and Holyoke in Massachusetts and asked Mr. Kropper if he cared to express an opinion as to what compensation might be made by the United States for the taking of such rights.

Mr. Kropper stated that claims had been made previously that Companies now enjoying certain rights at the Enfield Dam are trespassers in the river but that the Corps of Engineers does not hold wholly to that viewpoint. He said there is at present no legal provision by which compensation for these rights can be made. He stated that in another case the Congress had provided for adjudication by the U. S. Court of Claims of claims for compensation for such damages.

Mr. Smith, Attorney for the Windsor Locks Canal asked if the Corps of Engineers would make a recommendation as to the value of the rights at Enfield Rapids as they exist under the present development.

Mr. Kropper said that the Corps of Engineers would not make such a recommendation.

Mr. Smith stated that the Windsor Locks Canal has contracts with several manufacturing companies in Windsor Locks to furnish them with water for 999 years. He asked if the United States would estimate that contractual responsibility if the ownership of the existing dam and canal were voided. Mr. Kropper said that the plans for the proposed project called for supplying the manufacturing companies with water for process purposes.

Mr. Knowlton inquired as to whether water would be furnished for mechanical power and Mr. Kropper said he could not answer that question at the present time.

In reply to a question by Mr. Martin, Mr. Kropper stated that recommendations by the state concerning reimbursement for any rights which might be extinguished by the project would be in order.

In reply to a question, Mr. Rice of the Army Engineers stated that copies of the report and of the appendices might be obtained from the Division Engineer for the cost of reproduction - $1.50 for the report and $3.50 for all appendices.

Mr. Spellman said that he had no statement to make other than that the Federal Power Commission had cooperated in the preparation of the power appendices of the report.

Mr. Cooke commented that the report states that no alterations will be required to the Bulkeley Bridge in Hartford and stated that it was very important to Hartford and the surrounding area that the bridge should remain undisturbed. He pointed out that the City is considering the possibility of developing a city dock and expressed the opinion that a turning basin in the vicinity of such a dock, if constructed would be advisable. He asked who would be responsible for the rebuilding of the flood control stop log structure in connection with the raising of the New Haven Railroad Bridge at Hartford.

Mr. Kropper stated that the cost of rebuilding such structures would be borne by the United States.

Mr. Cooke said he would like to state for the record that relations with the Corps of Engineers in the planning and construction of flood control works in Hartford over a period of several years have been extremely satisfactory.

Mr. Hart of the Williams Company expressed the opinion that the fairway at the old steamship dock is a sufficient turning basin for any new dock at Hartford. He pointed out that the proposed project calls for a channel 12' deep when the river at Hartford is at the 2 foot stage and noted that the stage was only 0.8' the preceding Monday morning.

Mr. Rice stated that the 2 foot stage was normal low water and expressed the opinion that the development of power at the proposed dam would tend to keep the river about the 2 foot stage most of the time.

Mr. Hart stated that a 16' channel below Hartford would correct most of the present navigation difficulties. He was of the opinion that shipping companies would endeavor to take advantage of the proposed channel to Holyoke, if constructed, but anticipated some difficulty in doing so. He pointed out the difficulty of returning downstream empty when the water is high. He said that the hardest job would be to hit the center of the Bulkeley Bridge arch at highwater when coming downstream unloaded since the tendency is to build larger barges but he said it might be possible to carry a ballast on downstream trips. In reply to a question Mr. Hart stated that the proposed project would not require specially designed boats for navigation to Holyoke. He said that his Company definitely would operate on the proposed route if the channel is constructed.

The meeting was adjourned at 3:30 p.m.

Respectfully submitted

Richard Martin

Richard Martin, Secretary
Flood Control & Water Policy Commission.

FLOOD CONTROL AND WATER POLICY COMMISSION

Room 317, State Office Building

Hartford

N O T I C E

PUBLIC HEARING

June 23, 1949 2:00 p.m.
Room 585 State Office Bldg.
Hartford, Connecticut.

This hearing is being held by the State Flood Control and Water Policy Commission so that the Commission may obtain the ideas of interested Connecticut persons concerning the recommendation of the New England Division, U. S. Corps of Engineers for modification of a project previously authorized by the Congress to provide navigation in the Connecticut River to Holyoke, Massachusetts and for the development of Hydroelectric power at a navigation and power dam located approximately one mile above Windsor Locks, Connecticut.

The review study by the Corps of Engineers has been made in accordance with instructions by the Congress and in accordance with the provisions of Public Law 14, 79th Congress, approved March 2, 1945 which established a procedure for federal and state cooperation in the making of such studies and preparation of plans for such projects. In public law 14 Congress recognized the interest and rights of the states in determining the development of watersheds within their borders and the necessity and rights of the states in water utilization and control to preserve and protect to the fullest possible extent established and potential uses for all purposes of the waters of the Nation's rivers.

Public law 14 provides that the Corps of Engineers shall give affected states an opportunity to cooperate in investigations of river development proposals and projects. It provides that the Governor of each state shall designate an agency to represent the state in such cooperative investigations.

The recommendation of the Division Engineer was submitted on June 9 to the Board of Engineers for Rivers and Harbors, U. S. Corps of Engineers, for review. The Board of Engineers for Rivers and Harbors has fixed a period of four weeks or until July 7 during which time any person may submit his views on the proposal for the consideration of the Board. When determined the report of the Board of Engineers for Rivers and Harbors will be submitted to the Chief of Engineers, U. S. Corps of Engineers. His report will be transmitted formally to the Governor of the affected states for their consideration. Governors will have under the 1945 federal act a period of 90 days during which to submit any comments or recommendations concerning the project which they wish to make on behalf of their states.

Any such comments and recommendations will be transmitted by the Chief of Engineers with his report to the Congress. If the Congress authorizes the construction of the project and whenever the Congress makes appropriations available, the construction would be initiated by the Corps of Engineers.

Briefly, the project recommended by the New England Division, U. S. Corps of Engineers, calls, (1) for improving the existing navigation channel from Long Island Sound to Hartford by deepening it from 15' to 16' and by widening it at the bends, (2) for dredging a channel 100' wide and 12' deep from Hartford to the Enfield Rapids, (3) for construction at Enfield Rapids of a navigation and power dam to elevation 45.0 feet, (4) for such dredging in the pool formed by the dam as may be necessary to provide a 12' channel 100' wide from the dam to Holyoke, (5) for a turning basin in the river at Holyoke, (6) for the construction of a hydroelectric plant at the dam with an installed capacity of 42,000 kilowatts, (7) for a navigation lock 56' wide 360' long and having a depth of 18' over the sills at the dam, and (8) for fish ladders at the dam in accordance with requirements of the federal Fish and Wild Life Service.

The investigation by the New England Division has been underway during the past three years. Throughout that period representatives of the Division Engineer have cooperated to the fullest extent with the State of Connecticut. As the plans for the modified project developed, the information has been supplied from time to time to the various Connecticut persons directly concerned with the proposal. The Connecticut Light and Power Company, the Connecticut Power Company, the Hartford Electric Light Company, and the Connecticut Valley Power Exchange have been of material assistance to the State Flood Control and Water Policy Commission by making available detailed data concerning the operation load curve characteristics and other information relative to the project.

During the course of the study by the Division Engineer every effort has been made to eliminate the cause of objection to the authorized project. Those efforts have been successful in removing many of the objections previously raised by Connecticut interests to the authorized project.

The proposal for navigation to Holyoke and development of Hydroelectric power at Enfield Rapids has been highly controversial for some 25 to 30 years. This is the first time, however, that the project has been studied jointly by state and federal agencies and with the cooperation of all interested parties. The results demonstrate the value of the 1945 federal act providing for state participation. The attitude of the representatives of the Division Engineer has been highly commendable.

Although technically the proposal is for improvement of navigation with the development of power as an incidental benefit, actually the Hydroelectric feature represents by far the larger part of the estimated cost of the project and of the estimated benefits to be derived from it. The future course of action on the proposal quite likely will depend on whether the Hydroelectric development is desired. The proposal calls for a dam substantially higher than the dam called for in the authorized project. The increased head and pondage and drawdown made possible by the higher dam increases to a very considerable degree the amount of power which would be generated. The Division Engineer estimates that 247 million kilowatt hours could be generated during an average year. Independent estimates check this figure. The value of the project also depends on whether the power generated can be used economically within the area and federal agencies predict that such will be the case by 1955. There are a number of considerations of policy concerning the construction and operation of the power house concerning which the state may wish to make specific recommendations.

The project would require alterations to the state highway bridges at Windsor Locks-Farehouse Point and at Suffield-Thompsonville. It would require some alterations at the Thompsonville Sewage Treatment plant.

The State Flood Control and Water Policy Commission will value any suggestion which may be made to it. The State Flood Control and Water Policy Commission may wish to file a statement with the Board of Engineers for Rivers and Harbors prior to July 7 and subsequently it may be called on to express its opinion concerning the project. The Commission will appreciate any information or suggestions which may be made by any interested persons.

Richard Martin, Secretary

June 23, 1949

NAVIGATION STUDY, CONNECTICUT RIVER, LONG ISLAND SOUND

TO HOLYOKE, MASSACHUSETTS

1. INTRODUCTION:-

The present report which is the subject of this hearing was authorized by Section 7 of the River and Harbor Act approved July 24, 1946 and by Resolution of the Committee on Rivers and Harbors of the House of Representatives, adopted January 3, 1947 which requested a review of the previous report published as House Document 165, 76th Congress, 1st Session.

2. SCOPE OF REPORT:-

In general, the project recommended in the report includes improvement of the existing navigation channel from Long Island Sound to Hartford and extension of navigation from Hartford to Holyoke. This extension includes a dam and lock at the Enfield Rapids. A power house at the dam will utilize the water not required for lockage.

In a report with the wide scope such as this one, it is expected that not all questions can be fully answered at this time. However, all pertinent questions will either receive an answer here or by letter at an early date.

3. NAVIGATION:-

The existing 150-foot wide channel between the Lyme railroad bridge and Hartford, will be increased to a width of 200 feet with additional widening on bends, and the entire channel from Long Island Sound to Hartford, including the existing 300-foot wide channel below

the Lyme Railroad Bridge, will be dredged to a depth of 16 feet below mean low water. Anchorage areas, 600 feet long, 300 feet wide and 16 feet deep at mean low water will be provided at Old Saybrook, East Haddam, Haddam, Cromwell and Rocky Hill.

From Hartford to Holyoke a navigation channel 100 feet wide and 12 feet deep in earth, increased to 13 feet in ledge, at a river stage corresponding to 2.0 feet at Hartford will be provided by an open navigation channel to the Enfield Rapids and thence by a slack water pool created by the Enfield Dam.

The dam with crest elevation at 45.0 Hartford Datum, and a lock 56 feet wide by 360 feet long will be constructed immediately above the present Warehouse Point Bridge of the New York, New Haven and Hartford Railroad. Mooring facilities will be provided above and below the lock. Isolated locations in the slack water pool will be dredged as required to provide the channel 100 feet wide by 12 feet deep. A turning basin 300 feet wide by 1100 feet long and 12 feet deep will be provided at Holyoke. The existing dam at Enfield will be removed.

4. ENFIELD DAM:-

The Enfield Dam will be constructed immediately upstream of the existing Warehouse Point railroad bridge and will be provided with nine 66-foot by 28-foot tainter gates discharging through existing spans of the bridge. The bridge piers will be adaquately protected and no alteration of the superstructure will be required. The plan

has been reviewed by the Office of the Chief Engineer of the New York, New Haven and Hartford railroad and accepted as a most practical lay-out for the site from the railroad's point of view. The lock will be located upstream of the wide bridge span near the center of the river. The nine tainter gates have sufficient capacity to pass flood flows without an increase in the water surface profile over that occasioned by existing conditions upstream from the present Enfield Dam.

5. FLOOD CONTROL:-

The possibility of reduction of the flood levels upstream was considered and discarded when it became apparent that the constriction between Thompsonville and the Pecowsic Narrows would become a control and to obtain any significant reduction in the profile at Springfield, West Springfield, Chicopee and Holyoke it would be necessary to undertake costly excavation of large quantities of rock in the constricted reaches.

The operation during flood periods would be as follows: Generally the entire flow of the river would be passed through the power house, but as the flow of the river increased beyond the turbine capacity, the head pool would be maintained at elevation 45.0, Hartford Datum, by manipulation of the tainter gates until all tainter gates were wide open. The capacity of these gates with headwater at elevation 45.0 is approximately 220,000 c.f.s. which is 30,000 c.f.s. in excess of the 1927 flood and 15,000 c.f.s. less than the 1938 flood. The tainter gates have been designed to produce a water surface upstream

of the existing dam during major floods no higher than currently experienced. When the river fell to elevation 45.0 the tainter gates would be operated to hold the pool at elevation 45.0. This operation will provide no real flood control benefits but will avoid any increased flood hazard to any community on the river.

6. POWER HOUSE:-

A 42,000 kilowatt power installation will be constructed at the right bank of the river adjacent to the existing Windsor Locks Canal and just down stream from the railroad bridge to utilize the head provided for navigation and to produce 247,000,000 kilowatt hours of power per year. Four units will be provided. Each generator will have a capacity of 10,500 kilowatts and the turbines will be rated at 17,000 horsepower at 25-foot head. No transmission lines will be constructed as a part of this project, but consideration has been given to the necessity for the construction of such a line in determining the power rates used in economic studies for the project. This installation will be economic, thoroughly justified and will help to amortize the cost of the installation when constructed as a part of a multiple-purpose project.

7. EXISTING CANAL:-

The existing canal will be discontinued above the dam and the existing dam and head gates will be removed to provide additional capacity for the passage of flood flows. The canal below the dam

would be maintained in service for process water if desired by the present industries and suitable agreements were reached with the mill owners.

8. FISHWAY:-

The project has been reviewed by the Fish and Wildlife interests of the States of Connecticut and Massachusetts, as well as the Federal Fish and Wildlife Service. All suggestions of these departments have been included in the project and every attempt will be made to improve fish and wildlife conditions. Two fishways have been provided in the report plan. The most important fishway will be located from the downstream side of the power house to the upper end of the head race and is similar in principle to the fishway at the Bonneville Dam. The second fishway has been tentatively located between the westerly guide wall below the lock and the upper end of the lock. The exact location of this fishway must be reconsidered at the time of final design in conjunction with a model, in order that the location may be properly determined. It may be necessary to construct a third fishway at the east shore of the river and provision for this fishway is included in the report. In the construction of this dam it is expected that a considerable quantity of earth and rock spoil will be produced. Present plans for the construction contemplate that this material will be deposited on the westerly bank of the Connecticut River just downstream from the power house. The area would be graded and would provide a shad fishing location approximately equivalent to

the site currently maintained by the State of Connecticut near the existing head race. Some of the personnel of the fish and wildlife interests are of the opinion that the catch from this location should be superior to the catch at the existing sites.

9. ACKNOWLEDGMENTS:-

In conclusion, I would like to publicly express the appreciation of the Corps of Engineers to General Wadhams and Mr. Martin of the Flood Control and Water Policy Commission, Dr. Hunter of the State Board of Fisheries and Game, Dr. G. Albert Hill of the Highway Department, and other representatives of the State for their assistance and cooperation in the preparation of this report.

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The above statement was read by Mr. H. J. Kropper of the New England Division, Corps of Engineers, on 23 June 1949, at the hearing held by the Connecticut State Flood Control and Water Policy Commission.

THE WINDSOR LOCKS CANAL COMPANY

Hartford, Conn.

36 Pearl Street
P. O. Box 2010

June 23, 1949

STATEMENT CONCERNING THE PROPOSED
HYDROELECTRIC PLANT AT ENFIELD

The Windsor Locks Canal Company, a wholly-owned subsidiary of The Connecticut Light and Power Company, is a party at interest at this hearing in view of its ownership of land on both sides of the Connecticut River in the vicinity of the proposed development and of the present dam and canal above Windsor Locks. This Company is incorporated under the laws of the State of Connecticut and holds charter rights covering the generation of hydroelectric power at this location.

The Company has not had an opportunity to analyze in detail the complete report of the Corps of Engineers concerning the proposed development at Enfield. It is, however, apparent from our preliminary studies of the available data that the project as now contemplated differs materially from previous plans for a development at the Enfield site. The most important change is the increase in the height of the dam to 45 foot elevation (Hartford Datum) which materially increases the effective head available for power production as well as greatly increasing the storage capacity above the dam. In addition, the proposal to dredge a channel in the river below the dam improves the tail race conditions. The net effect of raising the height of the dam and dredging the channel is to afford an increase in power output of close to 30 per cent above previous proposals.

The very large increase in usage of electric power in Connecticut during the last few years will now permit the full utilization of the potential output of the project, which was not the case a few years ago. In view of this and of the changes in scope previously referred to, it is our opinion that this new plan is economically feasible. This conclusion is based upon the figures contained in the report of the Corps of Engineers concerning the power and energy output capability of the hydroelectric plant and the investment allocated to power of some $18,000,000 which leaves about $14,000,000 that must be justified by benefits to navigation. This Company is not in a position to determine the need or economic feasibility of that portion of the total project allocated to navigation, including the dredging of the Connecticut River below Hartford. These comments, therefore, are limited to the facilities involved in the generation of hydroelectric power.

6/23/49

In our opinion the government should only engage in the production of electric power in connection with the projects for improvement in navigation or flood control when private interests are unable or unwilling to do so. In line with this, therefore, we believe that the best interests of the people of Connecticut, as well as the country as a whole, can best be served by having private interests carry on that part of the development of the proposed project devoted to the actual production of power, rather than have the Federal government undertake to do so. If further study bears out our present view that the project is economically feasible, this Company is prepared to apply for a permit and to finance the installation of power generation facilities of the project which will relieve the Federal government of a major portion of the total investment required.

/s/ R. H. Knowlton

R. H. Knowlton, President
The Windsor Locks Canal Company

THE HARTFORD ELECTRIC LIGHT CO.

266 Pearl Street
Hartford 15, Conn.

June 17, 1949

The State Flood Control and Water Policy Committee
State Capitol
Hartford, Connecticut

Gentlemen:

Re: Public hearing June 23, 1949, to consider the recommendation of New England Division, U. S. Corps of Engineers, for a project to improve navigation in Connecticut River with development of hydro-electric power at Enfield. (Report dated June 3, 1949)

As one of the principal users of the Connecticut River as far as Hartford and as one of the potential markets for power from the proposed project if constructed, we wish to make the following statement at this time. The complete report by the Corps of Engineers, United States Army, has not yet been made available and consequently our comments must necessarily be of a general nature.

First, we wish to make it clear that we are not opposing this project. As taxpayers, however, we have an important interest that this or any other project will not be undertaken unless thorough studies demonstrate that the economic benefits to the people are sufficient to justify the required expenditure of public funds.

The project consists of two parts -- improvement of the river for navigation purposes and the development of hydro power. The following brief statement is made as to how these two parts concern us.

NAVIGATION

The Hartford Electric Light Company is one of the principal users of the river up to Hartford for bringing in coal and oil for its Steam Generating Stations located on the river at Hartford. The proposed improvement to the channel below Hartford will not increase the use of the river by us so far as we can determine.

As to the improvement of the river above Hartford for navigation purposes, this does not concern or affect us except as a taxpayer in common with others.

HYDRO POWER

As to the power aspect of the project we are keenly interested both as taxpayers and as distributors of electricity. The transmission line running from Hartford to the Massachusetts State line owned by the Connecticut Power Company is the nearest existing transmission facility to the proposed project. It is obvious that this transmission line and our interconnected systems it serves are potential facilities for the absorption of the power indicated.

We stand ready and willing to cooperate in the absorption of such hydro power providing -

1. The cost of such power including transmission costs can economically compete with the cost of power which may be available to us from other sources including our own generating equipment;

2. Proper arrangements can be made sufficiently in advance so that the proposed hydro capacity may be taken into consideration in our own capacity planning. It is obvious that it would be foolish for us to pay for added capacity if we have ample capacity of our own already available, as is the case at present. However, the kilowatt-hours from the proposed project could be absorbed on a fuel-saving basis at any time.

3. Both 1 and 2 above depend on arrangements being made for the most effective operation of the proposed plant at Enfield in coordination with the interconnected systems including up-river generating plants to the end that the maximum usefulness of the available water is developed.

Any source of power which is cheaper than our own generation is of great interest to us as a means of reducing prices for our service. On the other hand, if the cheapness of such power arises from an operation which is not self-supporting with resultant burden on taxpayers, we are doubtful that such kind of cheap power is beneficial in the long run. It is obvious that neither the Government authorities who will have the say in setting the price of power nor ourselves can intelligently discuss price at this time. We do not know what conditions will be in 1955, the estimated time of the completion of the project.

Sincerely yours,

/s/ Austin D. Barney

As President of
The Hartford Electric Light Company and

Vice-Chairman of the Board of
The Connecticut Power Company

STATE BOARD OF FISHERIES AND GAME

STATE OF CONNECTICUT

ADDRESS ALL MAIL TO
STATE BOARD OF
FISHERIES AND GAME
STATE OFFICE BUILDING, HARTFORD

June 22, 1949

Board of Engineers for Rivers and Harbors
Room 1336, Temporary Building T-7
Gravelly Point
Washington 25, D. C.

Gentlemen:

This is to acknowledge notification by Colonel James H. Stratton, New England Division, U. S. Army Corps of Engineers, dated June 9, 1949 relative to proposed improvement of the Connecticut River between the mouth of Long Island Sound and Holyoke, Massachusetts.

This department prepared a memorandum on this project for presentation at the hearing on the subject held at Windsor Locks on April 30, 1947. This memorandum related to the probable effects of the proposed navigation channel, dam and power plant upon the fisheries production in the Connecticut River. Our views on the project in 1947 may be applied to the present project which, apparently, differs only in that no navigation dam is called for at the railroad bridge at Hartford. A copy of our memorandum of 1947 is enclosed.

In addition to the material covered in the memorandum, we wish to submit an additional consideration not previously mentioned by this department.

Plan of Operation of the Dam - Effect on Pollution

It is probable that the daily flow in the Connecticut River will not permit a twenty-four hour operation of the proposed power plant throughout the year. There will probably be periods of low water flow during which the power plant will be operated only during daylight hours. At such times the flow in the river will be completely cut off. Pollution effluents, however, will continue to discharge into the river from all industrial plants and municipal installations from Windsor Locks downstream. This will produce a concentration of pollution not experienced at the present time and will doubtless have a deleterious effect upon aquatic organisms, particularly the developing young of shad and alewives during the summer period.

It is noted that the recommendations for the building of the dam, power plant and navigation channel were made subject to the provision that local interests would hold and save the United States free from claims for damage resulting from the construction and improvements below Hartford, including all such claims arising from the fishing industry.

The combined effect of the dam at Enfield Rapids and the probable intermittent operation of the power plant will have a deleterious effect upon fish production in the river. It is noted that provision is made for the diversion of water not in excess of seventy-five cubic feet per second for industrial uses. Provision should be made for the continuous discharge of a sufficient quantity of water to allow for the proper dilution of sewage effluents during periods of low river flow.

Very truly yours,

R. P. Hunter
SUPERINTENDENT

RPH/fc
Enc.
cc Colonel James H. Stratton
Mr. Richard Martin

STATE OF CONNECTICUT

G. ALBERT HILL
COMMISSIONER

STATE HIGHWAY DEPARTMENT

FILE NO.

PLEASE REPLY TO

Hartford 15, Connecticut
July 1, 1949

Mr. Richard Martin, Secretary
State Flood Control and Water Policy Commission
State Office Building
Hartford, Connecticut

Dear Mr. Martin:

After careful consideration of the recommendation of the New England Division, U. S. Corps of Engineers, for a project to provide navigation in the Connecticut River to Holyoke, Massachusetts together with the development of hydroelectric power at a dam located at the N.Y. N.H. & H. R.R. river crossing north of Windsor Locks, please be advised that in general the Connecticut State Highway Department is in favor of this project.

Naturally, we have examined this proposal only from the standpoint of its effect on the state highway system and such comments as are made refer only to the changes in our highway system that will be brought about by this project.

The project as proposed would allow the discontinuance of the present Windsor Locks Canal. It is understood the factories located along the river would still receive enough water for process purposes, but this quantity of water could be supplied through a four foot conduit. Thus, if the canal could be closed and filled in adjacent to the factory area in Windsor Locks the present canal bridge on Route 20 could be eliminated.

This bridge, like other structures over the canal, is owned by the Windsor Locks Canal Co. It has a clear roadway width of only 15.8 feet and seriously restricts the flow of traffic. On an average day in 1948 this bridge carried 4,000 vehicles, and such a traffic volume cannot be served adequately by a bridge so narrow that only one way traffic operation is possible. Also this bridge must be opened to permit the passage of boats through the canal. Although this latter operation is

infrequent (47 openings in 1948) each opening requires a ten to fifteen minute delay for the motorists. Therefore, we will greatly favor any plan which will permit elimination of this narrow restrictive structure on one of our through state highways.

The only other item in this proposal that directly affects the state highway system calls for the raising of the two highway bridges over the Connecticut River at Windsor Locks and Thompsonville, described in more detail on the attached tabulation. The plans call for raising the Windsor Locks Bridge 5.7 feet and the Thompsonville Bridge 4.3 feet at an estimated cost of $118,000. This cost, however, according to the proposal, shall be borne by the owners of the bridges which in this case is the State Highway Department. At the time of construction of these bridges they satisfied any demands for clearance that river navigation required. If it now seems advisable to make changes with regard to navigation on the river and allow larger size boats to operate, it would seem that the parties interested in, or who might be benefited by such a change should bear the expense of raising the bridges. It does not appear justifiable that the taxes paid by the highway motorist which now go for construction, maintenance, operation and policing the highways should be used for any other purpose such as aiding Connecticut River navigation or the generation of electric power.

Raising the Windsor Locks bridge 5.7 feet is necessary to provide a similar waterway clearance to that which exists at the Bulkeley Bridge in Hartford. Based on an analysis of daily river stage records of the last ten years, the Bulkeley Bridge would require the closing of the river to navigation during the periods of high water on an average of 8 days a year. The Windsor Locks Bridge at its present elevation would require the river to be closed to navigation on an average of 29 days a year. It, therefore, appears that if the Connecticut River is to be developed for navigation, the Windsor Locks Bridge should be raised. The benefits to be derived, however, are primarily advantageous to the persons using the river and not the motorists using the highway bridge. Moreover the benefits would accrue only 21 days per year or only 6% of the time.

Raising the Thompsonville Bridge 4.3 feet becomes necessary because of the height of the proposed dam at Enfield rapids. The dam height has been selected as the most economical elevation for the generation of hydroelectric power. If this elevation was 4.3 feet lower no change would be necessary in the Thompsonville Bridge. Therefore, any change in this bridge would be made in the interest for power generation and would not benefit the road user.

Actually, the raising of the Thompsonville Bridge would cost the State Highway Fund far more than the estimated amount mentioned in the proposal. This bridge was constructed in 1892 and although it does not have the width or load carrying capacity of our modern bridges, we have

just placed a new floor on the bridge and are now in the process of painting the steel superstructure. It should be serviceable for a considerable period of time. However, if faced with the problem of removing the impediment to navigation and power development, rather than expend the considerable sum necessary for raising the bridge, there would be considerable justification for the construction of an entirely new bridge. This would cost approximately $1,000,000.

In conclusion, then, I would like to state that the Highway Department is very much in favor of any proposals furthering the economic and social development of Connecticut, but it is felt that the highway users, the only contributors to the Highway Fund, should not be expected to aid in the financing of any projects which would not be of direct benefit to them

Very truly yours,

G.Albert Hill/s/

G. Albert Hill
State Highway Commissioner

RGM:sl
Enc.

CONNECTICUT RIVER

BRIDGE DATA

(Thompsonville & Windsor Locks)

	THOMPSONVILLE BRIDGE Between Enfield and Suffield	WINDSOR LOCKS BRIDGE Between Windsor Locks and East Windsor
State Route No.	Conn. 190	Conn. 20
1948 Aver. Daily Traffic	2400	4000
Total Length	1062'	1064'
No. of Spans	5 @ 212.5'±	7 @ 152'
Clear Span Width - Main Span	200'±	140'±
Clear Roadway Width	18.5'	23'
Clear Roadway Height - Floor to Portal	14'	17.8'
Clear Waterway height when river is at flood stage*	15.7'	14.3'
Sidewalk Width	1 @ 4.5'	1 @ 6.8'
Type of Superstructure	Steel Warren Truss	Steel Warren Truss
Type of Floor	Wood Plank	Concrete
Type of Substructure	Rough Ashlar Masonry	Concrete
Constructed	1892	1921
Condition and Remarks	The posted load limit is 8 tons. A new flooring was placed the latter part of 1948 and at present the bridge is being painted. This bridge, however, is structurally substandard, it lacks width and carrying capacity. Raising this bridge 4 ft. will increase the approach grades which on the Thompsonville end will not be too desirable because of the close proximity of the underpass at the R.R. The Suffield approaches have poor alinement.	Structurally this bridge is O.K. Its inadequacy is entirely in the approaches. Raising this bridge 6 ft. will improve the grades on the Windsor Locks end but will require considerable change in grades on Water St. and Bridge St. in Warehouse Point. This bridge was painted in 1948.

*Based on data contained in Corps of Engineers Report.

Boston 14, Mass.
June 28, 1949

Flood Control and Water Policy Commission
State of Connecticut
State Office Building
Hartford, Connecticut

Gentlemen:

Having reference to the hearing held before your Commission at 2:00 PM, June 23rd, in Hartford, Connecticut, relative to the report of the New England Division of the Corps of Engineers, U.S. Army, entitled, "Connecticut River Connecticut-Massachusetts Navigation Study".

According to the Survey Report of the U.S. Engineers, they recommend that the existing projects be modified to provide a 16-foot channel, 300 feet wide, from Long Island Sound to the Railroad bridge at Old Saybrook, thence 200 feet wide to Hartford, Conn., with anchorage areas of the same depth at five locations; a 12-foot channel, 100 feet wide, from Hartford, Connecticut, to Holyoke, Massachusetts, with a turning basin at the upper end; a dam at Enfield Rapids, having a crest at elevation 45.0 feet, a navigation lock, and a hydro-electric power plant having installed capacity of 42,000 kilowatts; at an estimated cost of $31,925,000 for new work, and $426,500 annually for maintenance and operation, all subject to certain conditions of local cooperation.

This is opposed by the Railroads represented by Zone Committee 1 on Waterway Projects, Association of American Railroads, the following railroads being involved:

New York, New Haven & Hartford
Boston andMaine
Boston and Albany

The general premise relative to navigation and power development on the Connecticut River has been under consideration for some years and has been vigorously opposed by the railroads and other interests in the Connecticut Valley consistently. The railroads are opposed to this for the following reasons:

1. Engineering and Physical Changes.

It is our understanding from the limited time given us to consider the revised projects, the appendices being received only last Friday, June 24th, that the raising of the New York, New Haven and Hartford Railroad Bridge at Hartford, 52.7 miles above the mouth of the river, 4.2', and the incorporating of the piers of the bridge of the New York, New Haven and Hartford Railroad at Warehouse Point into the tainter gate piers of the new dam, have been given satisfactory consideration in the plans of the U. S. Engineers. However, we

have not had sufficient opportunity since the receipt of the appendices to study the effect of the back water curves that may result from the impounding of water above the proposed dam at Windsor Locks, Enfield, just above the railroad bridge.

2. Power

At the hearing before your Commission on June 23rd, the Windsor Locks and Canal Co. stated that with the increase in the height of the dam and improvement in the channel downstream, as now contemplated by the U.S. Engineers, it would appear that the plan is feasible as far as the generation of power is concerned. If their further study shows this to be a fact, they would be in a position to apply for a permit to undertake the project with their own resources. They took the position that the Federal Government should not enter into power projects except when private interests are not willing to do so. We believe the point is well taken and consistent with the policy upon which this nation is founded andhas developed; that of free enterprise where the need has been demonstrated for a project and private enterprise and venture capital is willing to undertake the risks involved in development.

3. Navigation

It will be noted that the project proposes a channel 16' deep and somewhat wider in place of the 15' channel from Long Island Sound to Hartford. We believe the benefits to be derived from this are highly theoretical. Testimony before your Commission on June 23rd did not substantiate any substantial new tonnage which would result from this project. Testimony of the barge lines seemed to emphasize the existing difficulties that would not be overcome in the proposed plan; namely, the fact that in certain winter months navigation was out of the question. Considering the navigation possibilities to Holyoke as proposed, there would be times of low water when a boat might be stuck at Hartford and unable to get to Holyoke. It is my understanding from remarks of representatives of the U.S. Engineers that Mr. Hart's contention in this was correct. It is also my understanding of the statement before your Commission by the Hartford Electric Light Co. that the navigation improvement as proposed by the U.S. Engineers would not increase their tonnage of coal received by boat on the river.

4. Traffic

In this as in any other similar project, the expenditure, which in this case is now estimated at around $32,000,000 must be justified. We do not believe this has been done. Our position as regards a traffic study is as follows:

(a) No new traffic will be created; the so-called "benefits" are the estimated savings in transportation costs by diverting the petroleum and coal tonnage from the rails or highway to the barges.

(b) According to the optimistic estimates, the great bulk of the tonnage is in petroleum products. On these products - gasoline, kerosene and light fuel oils - experience has shown that the savings in transportation charges by water are not passed on to the consumers; the selling prices are made uniform over a wide area, and are alike at interior points and at tidewater points.

(c) We are convinced that the optimistic estimates of the Engineers as to benefits to the public are very much overstated and that the savings in transportation charges actually would be far below the estimated annual cost of maintenance account of navigation, stated to be approximately $533,300., allocated to the navigation project.

We propose to make a further analysis of this last report of the U.S. Engineers, but in the brief time allotted to us so far, we request that your Commission give earnest consideration to the statements outlined above in opposition to this large expenditure of the tax payers' money for such small returns.

Very truly yours,

C. S. Robinson
Chairman, Zone Committee 1
Committee on Waterway Projects

CC Messrs: E.K. Mentzer
J.C. Boyle
A.T. Danver
G.P. Elliott
H.C. Archibald
R.G. Henderson
P.J. Mullaney
W. A. Kember
O. L. Crawford
H. A. Poveleite
G. H. Fernald
W. E. Navin
S. Boyer
H. L. Filer

State Board Backs Army Power Dam

Enfield River Project Wins Approval with Reservations

By DICK HARTFORD

The Connecticut Flood Control and Water Policy Commission today approved the Army Engineers' plan for the Enfield power dam and navigation improvements in the Connecticut River.

Approval of the commission, headed by Gen. Samuel H. Wadhams, was announced by Richard Martin, secretary of the commission. The approval, which contains suggestions for minor revisions, is being sent to the Board of Engineers for Rivers and Harbors, Washington.

Construction of a hydroelectric dam at Enfield has been a controversial issue for many years. The present proposal is considered the most acceptable solution yet advanced.

* * *

THE COMMISSION finds:

That Connecticut will benefit from making the river channel between Hartford and the Sound 16 feet deep, one more than now.

That a navigation channel from Hartford to Holyoke will not damage the people of Connecticut, except the raising of bridges at Windsor Locks and Suffield.

That the installation of equipment to generate 48,000 kilowatts of hydroelectric power at the Enfield Dam is practicable.

That the output of this power will have economic use in Connecticut.

That the engineer's estimate of the cost of the project is reasonable.

That the projects should be undertaken whenever Congress provides the funds.

* * *

THE NEXT STEP will be a hearing soon in Washington by the Rivers and Harbors board. Then the chief of Army Engineers will refer the proposal to the Governor for his recommendations. The proposal then goes to Congress.

While approving the projects, the Connecticut commission also recommends the following revisions:

Fishways should conform with state regulations.

The sewage treatment plant at Thompsonville be relocated within state regulations.

Windsor Locks and Suffield bridges should be reconstructed at federal expense.

Statutory provisions for payment of damages to water power rights at Windsor Locks, Holyoke and Chicopee.

Careful consideration of the offer of any private power to construct proposed power generating facilities at the dam.

Improvements of the entrance to Wethersfield Cove, better landing facilities at Hartford and irrigation outlets from the river.

* * *

MR. MARTIN, in a letter with the commission's report to the board in Washington, states that the development of a power dam at Enfield Rapids "has been highly controversial for some 30 years."

Therefore, he said, "it may be desirable to discuss further some aspects of the project. The comments of this letter are my personal observations and do not necessarily reflect the view of the other members of the commission."

Mr. Martin stated that the "proposed hydroelectric plant at the Enfield Rapids will be of maximum value to the people of Connecticut if the power generated there is integrated with existing generating facilities in this state so as to help carry the larger peak loads of the anticipated increased total power consumption, the greater base load of which will be supplied by the enlarged steam generating installations.

"Coordinated with existing steam generating plants, the proposed project will have considerable value. Its usefulness does not depend on any other program for development of the water resources of the Connecticut River Valley.

* * *

"IT IS WORTHY of note, however, that other existing hydroelectric facilities, at Holyoke, Mass., and Wilder, Vt., are also in the process of being redeveloped by private owners. . . ."

Mr. Martin pointed out that "since the river flows in this region are inadequate to provide base load power in the quantities used here, the great bulk of power requirements will continue to be met by steam generation, the cost of which varies with the price of fuel.

"Hydro plants have a very definite value in this region as suppliers of peak power, but are not an accurate measure of the cost of producing the total power consumed.

"To the extent that power produced at the Enfield Rapids dam can be fed into existing distribution systems at a cost less than the cost of producing the same amount of power by steam or other hydroelectric plants, the proposed project will tend to effect a reduction in the cost of electricity to the customers of those systems.

* * *

"IF ENFIELD Rapids power had been available during 1948 at the estimated cost of producing it, the average cost of power in Connecticut last year could have been reduced by approximately one-tenth of one mill per kilowatt hour."

Mr. Martin explained that this would have meant a reduction of 17 cents in his personal yearly cost of electricity.

The Army Engineers' proposal calls for the engineers to construct and operate the power plant with the sale of the power to private utilities.

The Windsor Locks Canal Company, owner and operator of the existing dam and canal at the Enfield Rapids, "has indicated its willingness to construct the power generating facilities proposed by" the engineers, Mr. Martin points out.

Complete Commission Findings Page 43.

He says the right to build such a dam has existed for a long time, but it was generally believed that it could not be higher than 39.4 feet. The proposed dam would be 45 feet.

* * *

"OPERATION by the distributing company," Mr. Martin said, "of the generating facilities would permit closer integration than operation and distribution by separate agencies. We believe the offer of the company should have careful consideration . . ."

Mr. Martin states that the State Highway Department has "no funds other than those collected directly from highway users. Taxes imposed specifically on Connecticut highway users should not be expended for navigation benefits or for the production of power.

"We believe that the proposed project should include any necessary reconstruction by the federal government of bridges."

HARTFORD TIMES
DEC. 22, 1949

Water Power Board Lists Enfield Findings

Approval, with minor revisions, of the Army Engineers' proposal for a power dam at Enfield, and navigation improvements in the Connecticut River, were announced today by the Connecticut Flood Control and Water Power Commission.

The commission, headed by Gen. Samuel H. Wadhams, has sent its findings to the Board of Engineers for Rivers and Harbors in Washington.

* * *

THE COMPLETE findings, signed by Richard Martin, secretary of the commission, follow:

On June 9, 1949 the New England Division Engineer, U. S. Corps of Engineers, recommended:

(a) Improvement of the existing navigation channel in the Connecticut River from Long Island Sound to Hartford, Conn. by increasing the depth from 12 to 16 feet at mean low water, by additional widening at the bends of the existing channel and by creation of anchorage areas 16 feet deep at mean low water, 600 feet long and 300 feet wide at Old Saybrook, East Haddam, Haddam, Cromwell and Rocky Hill.

(b) Creation of a navigation channel in the Connecticut River from Hartford, Conn., to Holyoke, Mass., 100 feet wide, 12 feet deep at a river stage corresponding to 2 feet at Hartford and having a vertical clearance of 20 feet above a river stage corresponding to 16 feet at Hartford and creation of a turning basin at Holyoke.

(c) Construction of a dam at the Enfield Rapids in Connecticut to elevation 45 feet, Army Engineers' datum with a navigation lock 56 feet wide, 360 feet long and having a depth of 18 feet over the sills.

(d) Construction at the proposed Enfield Rapids Dam of a hydroelectric plant with a rated capacity of 42,000 kilowatts and a maximum capacity of 48,000 kilowatts.

* * *

THESE recommendations resulted from a detailed and comprehensive examination by the Army Engineers of the feasibility of additional development and utilization of the water resources of the Connecticut River.

Throughout the study the Army Engineers have worked closely with the Flood Control and Water Policy Commission, the state agency designated by the Governor of Connecticut to cooperate in matters of flood control, river and harbor improvement and shore and beach erosion. The Division Engineer's office kept us informed during the course of the study and was receptive to our suggestions.

The joint effort of the two agencies has produced a project with maximum benefits and a minimum of social and economic disruptions to the people of Connecticut. This highly satisfactory federal-state cooperation is an accomplishment of the Federal Rivers and Harbors Act of Mar. 5, 1945, which established procedures for joint participation in investigation and development of river and harbor projects.

The Flood Control and Water Policy Commission has not duplicated any detailed studies made by the Army Engineers. We have carried on independent research relative to the beneficial and adverse effects on the people which may result from the project. We have familiarized ourselves with the analytical procedures and methods used by the Army Engineers in reaching their conclusions.

* * *

ON JUNE 23, the Flood Control and Water Policy Commission held a public hearing in Hartford to obtain the views of Connecticut interests concerning the recommendations of the Division Engineer. During the hearing, statements were submitted by:

Richard Martin, secretary, Connecticut Flood Control and Water Policy Commission; Herman J. Kropper, chief, Civil Works, New England Division, Corps of Engineers; Robert H. Knowlton, president, Windsor Locks Canal Company, and president, Connecticut Light & Power Company; Austin D. Barney, president, Hartford Electric Light Company, and vice-chairman of the board, Connecticut Power Company; Dr. Russell B. Hunter, superintendent, Connecticut Board of Fisheries and Game.

Subsequently, statements were submitted to the commission by Dr. G. Albert Hill, Connecticut highway commissioner, and C. S. Robinson, chairman, Zone Committee 1, Waterway Projects, Association of American Railroads.

* * *

ON THE BASIS of testimony given at the hearing and other information available to it, the Connecticut Flood Control and Water Policy Commission finds:

1 The people of Connecticut will benefit from the proposed improvement of the existing navigation channel from Long Island Sound to Hartford.

2 The plans for the proposed navigation channel from Hartford to Holyoke will not damage the people of Connecticut, with the exception of the requirement that the State of Connecticut replace highway bridges between Windsor Locks and Warehouse Point and between Suffield and

3 The proposed installation of 42,000 kilowatts rated and 48,000 kilowatts maximum capacity at the multi-purpose dam at Enfield Rapids in Connecticut is practicable. The estimate of 237,000,000 kilowatt hours, net after allowance for loss incurred by existing installations as the average annual power production at the dam and the estimate of 179,000,000 kilowatt hours for the driest year of record are reasonable.

4 The output of the proposed power installation will have economic use in Connecticut by the time the project can be constructed.

5 The Division Engineer's estimate of cost of the combined navigation and hydroelectric project is reasonable and adequate and the method used by the Division Engineer to allocate a portion of the entire cost to the production of power is equitable.

6 The proposal of the Division Engineer for improvement of navigation in the Connecticut River from Long Island Sound to Holyoke, Mass., with the production of hydroelectric power at Enfield Rapids in Connecticut should be undertaken whenever the Congress deems it advisable to appropriate the necessary funds.

The commission urges the Board of Engineers for Rivers and Harbors and the Chief of Engineers to revise the recommendation of the Division Engineer to provide:

1 That the proposed construction and operation of fishways and proposed replacement of an existing fishing pier at the Enfield Rapids dam be carried out in accordance with state and local regulations.

2 That the relocation of the sewage treatment plant at Thompsonville, Conn., be in accordance with state and local regulations.

3 That the Windsor Locks-Warehouse Point state highway bridge and the Thompsonville-Suffield state highway bridge be reconstructed at the expense of the federal government.

4 Statutory provision for determination by the U. S. Court of Claims of claims for damage done by the proposed project to existing water power rights and installations at Windsor Locks in Connecticut and at Holyoke and Chicopee in Massachusetts. In previous reports the estimated cost of redevelopment has always included payment by the United States for such damage. The current recommendation of the Division Engineer notes that there is no legal basis for compensation by the United States for such damage.

5 For careful consideration of the offer of any private company distributing power in Connecticut to construct the proposed power generating facilities, in accordance with the licensing provisions of the Federal Power Act,

States for purchase of water, and provided that the cost of construction shall not be greater than the cost if constructed by the United States.

6 Improvements of the entrance from the Connecticut River to Wethersfield Cove.

7 Improvement of the channel at Hartford to permit better landing and shipping facilities at Hartford.

8 That construction plans for the dam take into consideration the possibility of using water from the Connecticut River for irrigation purposes.